

1. C = normal c = disease Father: CC homozygous dominant

2. G = normal g = disease Mother: Gg heterozygous

3. Genotypes 1: 1 (SS:Ss)

Phenotypes 1:1 (half normal for sickle cell/prone to malaria; half symptoms of sickle cell/resistant to malaria)

4. S = normal s = disease Mother: ss Father: Ss

5. H = disease h = normal Father: Hh Mother hh

6. Codominance

TT = two pronged spines OO = One pronged spines TO = Mixed spines (one and two prongs)

1/4 TT (25%) : 2/4 TO (50%) : 1/4 OO (25%)

7. Incomplete dominance

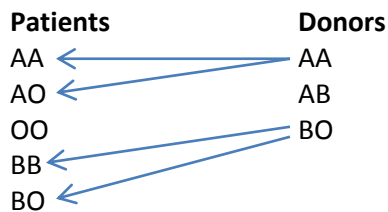
BB = Blue BY = Green YY = Yellow

1/4 BB (25%) : 2/4 BY (50%) : 1/4 YY (25%)

8. "Calico" needs a copy of EACH X^B allele and X^O allele since it is a codominant pattern. Males only ever get one copy of an X-chromosome...so can NEVER have a genotype $X^B X^O$

9. Mother was a carrier of hemophilia (XX^h) which is X-linked recessive. Mother passed on the trait to her daughter and son but ONLY the son expresses the disease, while the daughter is a carrier.

10. OO = OUT OF LUCK ☹ Blood groups A & B are Codominant to each other, and both dominant to O blood type; This represents a form of "Multiple Alleles" inheritance.



11.

Genotypes:	sSbB	sSbb	ssbb	ssbB
Phenotypes:	Short/Black	Short/Red	Long /Red	Long/Black
	25%	25%	25%	25%

12. Same results as #11